Utilizing Digital Methods to Document and Reconstruct Old Sheldon Church

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The adoption of advanced technologies in the field of historic preservation has occurred at a much slower rate when compared to related fields such as geography and archaeology. For years, geographers have been working with geographic information systems to create predictive models and dynamic maps, while archaeologists have been incorporating three-dimensional visualization technology to reconstruct historic sites. Gradually, historic preservationists are incorporating newer digital technologies to document, record, and visualize historic structures. The material generated through the research and documentation of a structure can be repurposed to communicate with a range of viewers, from scholars to the general public less versed in the language of the preservationist. This poster will demonstrate the process of employing photomodeling and photogrammetry techniques, along with three-dimensional laser scanning and three-dimensional visualization tools to research, document and recreate the historic ruin of Old Sheldon Church for a variety of interpretive and academic purposes.

Situated in Prince William's Parish, near the town of Yemassee, SC, is the ruin of Old Sheldon Church. Sheldon Church served some of the wealthiest planting families in South Carolina, and the craftsmanship and materials utilized to construct the church reflect this. The Bull family is the most notable of families in the parish, as William Bull assisted General James Oglethorpe in surveying the city of Savannah. The cornerstone of the church was laid in 1751.[1] This is represented by glazed headers, which are laid in a pattern to form the numerals on the east façade. According to one architectural historian, Sheldon represents the first building in America to employ the Greek or Roman temple form in its design.[2]

In May of 1779, during the Revolutionary War, the church was ordered to be burned. It was thought the colonists were using the church to store munitions.[3] The church lay in ruins for

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[1] Roy Flannagan, *A Short History of the Parish Church of Prince William, Called Old Sheldon Church*, Beaufort, SC, (Catesby Publishing Company, 2011), 4.

[2] Louis P. Nelson, *The Beauty of Holiness: Anglicanism & Architecture in Colonial South Carolina*, Chapel Hill, NC, (The University of North Carolina Press, 2008), 52.

[3] John Reynard Todd and Francis Marion Hutson, *Prince William's Parish and Plantations,* Richmond, VA, (Garrett & Massie, 1935), 77.

forty-six years until it was rebuilt in 1825.[4] Tragedy struck the church again in 1865 when, during the Civil War, the church fell in ruin once more.[5] Most sources indicate the church was burned by Sherman's troops, while another suggests it had succumbed to looting. Whichever the case, the church remains a ruin to this day.

During the past winter, eight historic preservation graduate students, enrolled at the Savannah College of Art and Design, participated in a preservation course that focused on incorporating newer digital technologies in to the process of researching and documenting historic buildings. Specifically, the students were charged with documenting the site through digital methods and developing a three-dimensional reconstruction of the Old Sheldon ruins. To achieve this goal, students documented the site utilizing a free photomodeling and photogrammetric tool developed by Autodesk, called 123D Catch and the Faro Focus 3D, a three-dimensional laser scanner. 123D Catch was able to produce an accurate polygonal model of the ruins, while the Faro Focus collected highly precise pointcloud data. The pointcloud data was brought in to AutoCAD to create two-dimensional drawings, which, at this point, are a more acceptable form of documentation in the preservation field. The two-dimensional CAD drawings were the basis for the reconstruction, which was completed in Google SketchUp. The synthesis of this data is a historically accurate, richly detailed, dynamic digital three-dimensional reconstruction, which can be repurposed for both pedagogical and academic applications.

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[4] Flannagan, 11-13

[5] Flannagan, 13-14